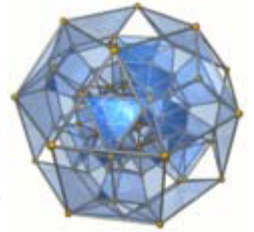




Zone 5 Mathematics Implementation Project Plan: 2010 – 2011



Project Goals

To develop and facilitate professional development opportunities which support the successful implementation of the new Alberta K-12 Mathematics Program of Studies.

Specifically –

- Provide opportunities which build teacher content knowledge for mathematics instruction
- Support the development of teachers' instructional strategies in mathematics
- Provide opportunities which develop teachers' capacity to understand student's mathematical thinking
- Support administrators as instructional leaders by offering opportunities which develop their understanding of the pedagogy of the new math curriculum

Executive Summary

Environmental Scan/Participant Needs Assessment:

Using a number of sources collected by the Calgary Regional Consortium over the past year, the CRC Math Advisory Committee was able to determine the needs in our area and develop goals for the upcoming year of implementation. We work with the idea that our plan is a fluid one which allows us to monitor the effectiveness of our programming and is therefore responsive to any needs that may arise throughout the year.

CRC Mathematics Advisory Committee:

Purpose:

The role of the advisory committee includes the following: 1) Contribute to building of the regional implementation plan. 2) Provide feedback regarding the plan as it develops. 3) To communicate the intent of the plan within our organizations. 4) Contribute to the evidence of the success of the plan. 5) Make suggestion for future plans.

Members:

Deanna Robertson – Calgary Board of Education
Cheryl Schaub – Calgary Board of Education
Mary Amantea-Klukas – Calgary Separate School Division
Alison Vandelaak – Calgary Separate School Division
Yvonne Machuck – Canadian Rockies Public Schools
Diana Atkinson – Christ the Redeemer School Division
Kathi Lalonde – Christ the Redeemer School Division
Doug Stevens – Foothills School Division
Tamara Gordon – Golden Hills School Division
Kara Strobel – Prairie Land Regional Division
Kim Agnew – Rocky View School Division
Rosalind Carson – Rocky View School Division
James Sipheer – Trinity Christian School
Denise Budgen – Foundations for the Future Charter School
Dr. Olive Chapman – University of Calgary

Grant Background:

Alberta Education has provide the Calgary Regional Consortium with a three year Implementation Grant which includes funding to provide mathematics support for implementation of the new program of studies in our region. A condition of receiving this grant is that the CRC meets the grant deliverables as outlined by Alberta Education. Of the \$674 000.00 of implementation funding for the 2010-2011 school year, mathematics will receive \$404 290.00.

Project Coordinator/Consultant (1.0 FTE):

This is Debbie Ziegler's second year as the Mathematics Coordinator/Consultant for the Calgary Regional Consortium. Her previous role was mathematics teacher and school based administrator at the National Sport School with the Calgary Board of Education (CBE). In this role she taught high school mathematics and was charged with building out a school based professional development plan that supported teaching and learning in a blended environment. She also provided system support for high school teachers within the CBE on a part time basis. She has also been involved with Alberta Education on the new Mathematics Curriculum and has facilitated study groups, workshops and other learning opportunities for teachers outside of the CBE. Debbie completed her Master of Science degree in secondary mathematics and her research focused on understanding teacher change.

As the mathematics coordinator/consultant, Debbie Ziegler's role is to facilitate professional development, assist stakeholders, and develop leadership capacity. She acts as liaison between the members of the advisory committee and all stakeholders. She communicates and collaborates with Dr. Jean Hoeft, Executive Director of the CRC. Her goal is to develop leadership capacity in the area of mathematics and to help teachers bring effective and innovative teaching practices into the classroom that are reflective of the new Alberta K-12 Mathematics Program of Studies.

Context for the Plan

In the first year of the implementation grant (07/08), the Math Advisory Committee and Tracy Drummond (CRC Math Consultant/Coordinator) adopted a professional model created by Fogarty & Pete (*From Staff Room to Classroom*, (2007)) in order to have a common framework for considering each professional development opportunity. The 'Centers of Pedagogy' model offered a focus for discussions and decision-making when choosing appropriate professional development with a targeted audience in mind. During the 09/10 school year, Debbie Ziegler replaced Tracy as Math Consultant/Coordinator. Debbie and the Math Advisory Committee explored different models supporting the implementation of the new Alberta Program of Studies for Mathematics. At the end of the year they reviewed the professional development opportunities presented by the CRC using the seven essential conditions for implementation outlined in *A Guide to Support Implementation: Essential Conditions*. During this process it was decided to use the framework developed in this document in the for the 10/11 implementation plan. A decision was made to include the 7th essential condition (Community Engagement) in the implementation plan. It was decided that this condition was important but not part of the scope of the CRC work. It was best addressed at the jurisdictional level and would be supported by CRC when appropriate.

During the past year the Math Advisory team also reviewed some of the research and literature supporting mathematics educational leadership. A decision was made to use the four leadership principles outlined in *The PRIME Leadership Framework* (2008). These principles are used along with the essential conditions to support the implementation of the new mathematics program of studies.

CRC Mathematics Implementation Plan 2010 - 2011

Overarching Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Shared Vision

Stakeholders share an understanding of and commitment to the intended outcome(s).

Guiding Questions:

- How is the shared vision evident in the implementation plan?
- What process is used to facilitate ongoing review of the shared vision by stakeholders?

Strategy

Clearly define the role of the CRC in supporting the Calgary area jurisdictions with the implementation of the new program of studies.

Indicators

- Revisit the grant deliverables and the stakeholders' priorities, needs and contexts
- Write a vision statement for the next 3 years of implementation
- Communicate and share this vision amongst stakeholders

Source of Evidence

- Math Advisory meeting is organized to reflect this work and it is reflected in the minutes
- Share the vision statement in the communication pieces of the CRC (newsletters, emails, WIKI and flyers)

Year End Report and Reflection on Lessons Learned

Overarching Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Leadership

Leaders at all levels have the capacity to champion the shift from the current reality to the intended outcome(s).

Guiding Questions:

- How are current and future leaders being supported and developed?
- How are leadership roles and responsibilities articulated?
- How are current and future leaders collaborating to build their leadership capacity?
- How are leaders working towards sustaining implementation?
- What plans are in place to support leaders' ongoing career-long/life-long professional growth?

Strategy

Clearly define who the leaders are in the CRC jurisdictions and provide opportunities for building capacity amongst these groups.

Indicators

- Leaders are identified including the different ways in which leadership is demonstrated
- Enhance the Math Advisory members' knowledge of the current research in the field of math educational leadership
- Investigate different ways for identified leaders to work together

Source of Evidence

- Develop CRC data-base indicating who is attending pd opportunities
- Math Advisory members provide a list of math leaders in their jurisdictions and their roles in their jurisdictions
- Reference and use this research in our work and meetings
- Invite guest speakers to attend our math meetings ie. Connections with UofC (Olive Chapman)
- Use the Wiki to share current research in this area
- Use of professional readings and literature in our Math Advisory meetings
- Establish Regular webinars connecting leaders from different jurisdictions
- Develop a Wiki for these people to be part of – look to the Math Advisory Committee to facilitate the ongoing conversations in this Wiki

Year End Report and Reflection on Lessons Learned

Strategy

To explore different ways of providing professional growth opportunities that build leadership capacity among participants.

Indicators

- Network with other provincial consortia to identify how they are working with their jurisdictions
- Ask for Math Advisory Committee to identify ways they are building capacity with their leaders within their jurisdictions
- Continue to develop and examine ways for district and school based administrators to support classroom teachers with the implementation
-

Evidence

- This can be shared in the provincial Wiki site for ARPDC math consultants
- Math advisory meeting minutes
- Sessions offered specifically for administrators
-

Year End Report and Reflection on Lessons Learned

Overarching Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Research and Evidence

Current research, evidence, and lessons learned inform implementation decisions.

Guiding Questions:

- What data, including current research, evidence and lessons learned, is being collaboratively and systematically collected, and analyzed for the benefit of all learners?
- How is data being used to inform implementation planning and evaluation at the classroom, school, jurisdiction, school board, and provincial levels?

Strategy

Collect different types of data and increase the amount of data being collected.

Indicators

- Action research project
- Analyze the ARPDC session evaluation
- Administer needs assessment survey (in the fall and spring)
- Interview people who are attending sessions

Evidence

- Wiki collecting feedback around action research project
- Data collected and reported
- Data collected and reported
- Include these in reporting

Year End Report and Reflection on Lessons Learned**Strategy**

Change our practice for collecting and representing data.

Indicators

- New feedback forms in addition to current ARPDC forms
- Develop ways for teachers to provide feedback in the online environment (Wiki)
- Review the feedback and use this to develop future implementation plans
-

Source of Evidence

- Wiki
- Wiki
- Plans reflect the feedback received from stakeholders
-

Year End Report and Reflection on Lessons Learned

Overarching Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Resources

Human resources, materials, funding, and infrastructure are in place to realize the intended outcomes.

Guiding Questions:

- What human and material resources are required to support this change?
- What is the current capacity to support this change?

Strategy

Provide a selection of administrator specific math professional learning resources/opportunities, which support their role as instructional leaders in their schools.

Indicators

- Needs assessment
- Look at the need to develop a feedback form for the provincial Math Institutes
- Work closely with publishers around development of teaching and learning resources avail to teachers supporting curriculum implementation

Source of Evidence

- Data collected and reported
- ARPDC evaluation forms developed and reported on
- Meetings and partnerships on professional development opportunities with publishers of approved resources

Year End Report and Reflection on Lessons Learned

Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Teacher Professional Growth

Teacher knowledge, skills and attributes are enhanced through ongoing professional learning.

Guiding Questions:

- How are the needs of the teacher, school, system and province being addressed through professional learning?
- How are educators using self-assessment to inform their professional growth learning?
- How are curriculum, instruction and assessment integrated in the design of professional learning opportunities?
- How does participation in professional learning enhance professional practice?
- How are educators collaborating to support their professional growth?

Strategy

Develop opportunities for teachers to collaborate.

Indicators	Source of Evidence
<ul style="list-style-type: none">• Develop online supports so teachers are able to follow-up with their learning opportunity with others who participated to reflect on their understanding and learning	<ul style="list-style-type: none">• Online professional development opportunities (Wiki development)
<ul style="list-style-type: none">• Develop scheduled webinars so teachers are able to collaborate and share across the consortium.• Develop blended professional development opportunities that allow multiple entry points for teachers.	<ul style="list-style-type: none">• Monthly webinars supporting the planning of new curriculum.•
<ul style="list-style-type: none">• Investigate the idea of self-assessment to inform professional growth learning	<ul style="list-style-type: none">• Work with Advisory• Investigate the use of an instrument that can be used with teachers to encourage personalization of pd• Work with Olive and UofC to look at ways to do this

Year End Report and Reflection on Lessons Learned

Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Essential Condition: Time

Time is provided to support implementation.

Guiding Questions:

- How will current research about “change” be reflected in the implementation plan as it relates to the time required to affect change?
- What strategies are in place to ensure that each stakeholder group has the time they need to successfully implement and sustain change (e.g., formal and informal learning reflective practice)?
- How are curriculum, instruction and assessment integrated in the design of professional learning opportunities?
- How does participation in professional learning enhance professional practice?
- How are educators collaborating to support their professional growth?

Strategy**Indicators**

- Investigate and share how different jurisdictions and boards are accounting for the individual and collaborative time required to implement and sustain change.

Source of Evidence

- Math advisory meeting minutes

Year End Report and Reflection on Lessons Learned

Action Research Project

Overarching Goal:

To facilitate professional development opportunities which support the successful implementation of the new Alberta Mathematics Program of Studies K-12.

Evaluation: Collecting Evidence of Impact

Action Research Project:

The Calgary Regional Consortium has deliberately chosen to focus on depth of understanding rather than breadth of reach as a fundamental aspect of professional learning. By definition, teachers who have an opportunity to go into greater depth while exploring new philosophy, content and pedagogy, have multiple entry points to the learning. They are able to “get it” through varied experiences and by approaching the learning from multiple angles. In addition, modeling this approach with teachers also opens the door to the use of multiple instructional and assessment strategies for students. (Gagnon, 2010)

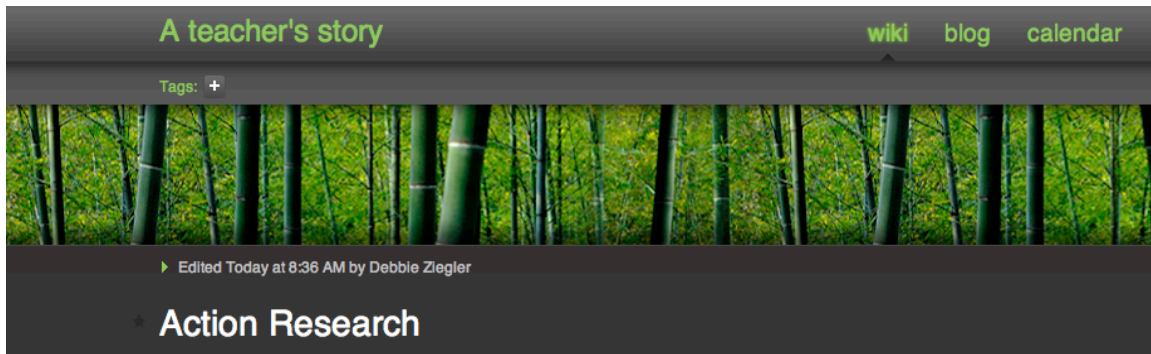
Action research is used to assess the program implementation process situated in the classroom. One teacher has been chosen who participated in the 2009-2010 implementation workshop series.

Research Questions:

- How does the teacher view and conceptualize the philosophy, content and pedagogy of the new Alberta Mathematics Program of Studies and his own self efficacy?
- In what ways has teacher practice been impacted as a result of participation in the 2009-2010 CRC workshops, book study, and online collaboration?

Data Gathering Techniques:

- Questionnaire: teacher efficacy belief instrument (Riggs & Knochs, 1990)
- Interviews: audio and/or video with teacher at three stages during semester 1
- Teacher and Student Artifacts: demonstrating implementation of the new mathematics program
- Teacher Reflection: through online blogs



Timeline for Research:

- October 2010– January 2011: questionnaire, interviews, collection of artifacts and teacher reflections
- February 2011: evaluation and analysis of data
- March 2011: report preparation

References:

Gagnon, L. (2010). *Ready for the Future: the Role of Performance Assessment in Shaping Graduate's Academic, Professional and Personal Lives*. Boston, MA: Center for Collaborative Education.

Riggs, L. & Knoch, L. (1990). Towards the development of an elementary teacher's science teaching efficacy belief instrument. *Science Education*, 74:625-637

CRC Mathematics GRANT – YEAR 4 (2010-2011) PROPOSED BUDGET As of October 30, 2010		
REVENUE:		
Year 4 Grant (2010 - 2011)	\$ 404 000.00	
TOTAL REVENUE:		\$ 404 000.00
EXPENSES:		
REGISTRATION & COORDINATION SERVICES		\$ 60 000.00
Open Registration Sessions: <ul style="list-style-type: none"> • Alberta Education Sessions (PAT, diploma exam) • Good Problems Series (Dr. Gord Hamilton) • Webinars • Math Solutions • High School Math Institutes • SMARTboards in the Math Classroom • Power of Ten – Trevor Calkin • Assessment – Peter Liljedahl • Administrator – Dr. David Decoste • TBD 		\$ 2 000.00 \$ 3 000.00 \$ 5 000.00 \$ 15 000.00 \$ 10 000.00 \$ 8 000.00 \$ 4 000.00 \$ 2 000.00 \$ 8 000.00 \$ 12 000.00
Leadership Cohorts/Special Projects:		
* Good Questions		\$ 10 000.00
* Golden Hills		\$ 5 000.00
* Cathy Fosnot's Group		\$ 8 000.00
* Advisory Board Support		\$ 5 000.00
* Jurisdiction Support		\$ 61 000.00
* Understanding by Design – Julie Desmormeaux		\$ 7 000.00
* Action Research Project		\$ 5 000.00
* Assessment Development		\$ 20 000.00
PROFESSIONAL RESOURCES (Text & Digital):		\$ 20 000.00
ADVISORY COMMITTEE:		\$ 9 000.00
* support and meetings		
ADMINISTRATION:		\$ 125 000.00
TOTAL PROPOSED BUDGET:		\$ 404 000.00

**CRC MATHEMATICS IMPLEMENTATION GRANT – YEAR 4
(2010-2011)**

LEADERSHIP – SCHOOL JURISDICTION SUPPORT

<i>School Jurisdiction</i>	<i>Budget Amount</i>
Calgary Board of Education	\$ 16 000.00
Calgary Separate School Division	\$ 16 000.00
Rocky View Schools	\$ 8 000.00
Christ the Redeemer School Division	\$ 3 000.00
Canadian Rockies School Division	\$ 3 000.00
Foothills School Division	\$ 3 000.00
Golden Hills School Division	\$ 3 000.00
Prairie Land Regional Division	\$ 3 000.00
Private/Charter/Band	\$ 6 000.00
Total	\$61 000.00